

AMENDMENTS TO THE CLAIMS:

1-21. (Cancelled)

22. (New) A microcapsule for treating a first reactant with one or more further reactants selected from the group consisting of microorganisms and enzymes to yield one or more products, comprising:

a core comprising said one or more further reactants; and

a membrane comprising a first layer that fully encloses said core and a second layer that fully encloses said first layer, wherein

said membrane is configured and adapted to be impermeable to said one or more further reactants and to be permeable to said first reactant and to at least one of said one or more products.

23. (New) The microcapsule of claim 22, wherein said first layer includes a first primary component, and wherein said second layer includes a second primary component, the first primary component of said first layer being different from the second primary component of said second layer.

24. (New) The microcapsule of claim 22, wherein said core includes a matrix in which said one or more further reactants are embedded.

25. (New) The microcapsule of claim 24, wherein said matrix comprises an alginate compound of a polyvalent cation.

26. (New) The microcapsule of claim 24, wherein said matrix includes a third primary component, and wherein at least one of the first primary component of said first layer and the second primary component of said second layer differs from the third primary component of said matrix.

27. (New) The microcapsule of claim 24, wherein said matrix is in a liquid state.
28. (New) The microcapsule of claim 22, wherein said first layer and said second layer are covalently bonded.
29. (New) The microcapsule of claim 22, wherein said first layer and said second layer are ionically bonded.
30. (New) The microcapsule of claim 22, wherein said membrane is configured and adapted to be impermeable to at least one undesired reactant known to impair the treatment of said first reactant with any of said one or more further reactants and selected from the group consisting of microorganisms and active substances.
31. (New) The microcapsule of claim 30, wherein said at least one undesired reactant comprises a toxin present in said first reactant.
32. (New) The microcapsule of claim 22, wherein said first reactant is wine, and said one or more products include alcohol and carbon dioxide.
33. (New) The microcapsule of claim 22, wherein said one or more further reactants comprises at least one species of yeast used in alcohol fermentation.
34. (New) The microcapsule of claim 22, wherein said one or more further reactants comprises at least one species of lactic acid bacteria used in the biological acid breakdown process in wine treatment.
35. (New) The microcapsule of claim 22, wherein said one or more further reactants comprises one or more enzymes selected from the group consisting of pectinases, glucanases, β -glucosidases, proteases and glucose-fructose-isomerases.

36. (New) The microcapsule of claim 22, wherein said one or more further reactants comprises cells from at least one species of microorganism and at least one enzyme.

37. (New) The microcapsule of claim 22, wherein said one or more further reactants comprises at least one species of yeast used in wine production as well as at least one of a yeast cell wall preparation and a glucose-fructose-isomerases.

38. (New) The microcapsule of claim 22, wherein said one or more further reactants comprises at least one substance known to increase activity of at least one of said one or more further reactants as regards the treatment of the first reactant with said at least one of said one or more further reactants.

39. (New) The microcapsule of claim 22, wherein at least one of the first primary component and the second primary component respectively of said first layer and said second layer is a polymer.

40. (New) The microcapsule of claim 39, wherein said polymer is a polyelectrolyte complex.

41. (New) The microcapsule of claim 40, wherein said polyelectrolyte complex comprises:

at least one polyanion selected from the group consisting of polyacrylic acid, polymethacrylic acid, polyvinylsulfonic acid, polyvinylphosphonic acid, alginate acid, cellulose derivatives including carboxymethyl cellulose and cellulose sulfuric acid ester, shellac and shellac components including aleuric acid and shellolic acid; and

at least one polycation selected from the group consisting of polyethylenimine, polydimethyl dialylammonium, chitosan and poly-L-lysine.

42. (New) The microcapsule of claim 41, wherein one of said polyanion and said

polycation has a mean degree of polymerization in the range of 100 to 15,000 and the other of said polyanion and said polycation has a mean degree of polymerization of more than 50,000.

43. (New) The microcapsule of claim 39, wherein said polymer is polystyrol, polymethyl methacrylate and/or natural rubber or a mixture thereof with one or more polyelectrolyte complexes.

44. (New) The microcapsule of claim 22, wherein said one or more further reactants comprises at least one species of yeast used in beer production.

45. (New) The microcapsule of claim 22, wherein said microcapsule has a diameter of at least 0.5 millimeters.

46. (New) A method for treating a first reactant with one or more further reactants selected from the group consisting of microorganisms and enzymes to yield one or more products, comprising the step of:

immersing one or more microcapsules in said first reactant, wherein at least one of said microcapsules comprises:

a core comprising said one or more further reactants; and

a membrane comprising a first layer that fully encloses said core and a second layer that fully encloses said first layer, wherein

said membrane is configured and adapted to be impermeable to said one or more further reactants and to be permeable to said first reactant and to at least one of said one or more products.

47. (New) The method of claim 46, comprising the further step of separating said first reactant and said one or more microcapsules by means of a mechanical process.

48. (New) The method of claim 47, comprising the step of reusing said one or more microcapsules separated from said first reactant in another batch of said first reactant.

49. (New) The method of claim 47, comprising the step of storing said one or more microcapsules separated from said first reactant in a nutritive solution.

50. (New) The method of claim 46, wherein said first reactant is a fruit juice and said method is a method for producing wine.

51. (New) The method of claim 46, wherein said first reactant is wine and said method is a method for producing sparkling wine.

52. (New) The method of claim 46, wherein said first layer includes a first primary component, and wherein said second layer includes a second primary component, the first primary component of said first layer being different from the second primary component of said second layer.

53. (New) The method of claim 46, wherein said core includes a matrix in which said one or more further reactants are embedded.

54. (New) The method of claim 53, wherein said matrix comprises an alginate compound of a polyvalent cation.

55. (New) The method of claim 53, wherein said matrix includes a third primary component, and wherein at least one of the first primary component of said first layer and the second primary component of said second layer differs from the third primary component of said matrix.

56. (New) The method of claim 53, wherein said matrix is in a liquid state.

57. (New) The method of claim 46, wherein said first layer and said second layer are covalently bonded.

58. (New) The method of claim 46, wherein said first layer and said second layer are ionically bonded.

59. (New) The method of claim 46, wherein said membrane is configured and adapted to be impermeable to at least one undesired reactant known to impair the treatment of said first reactant with any of said one or more further reactants and selected from the group consisting of microorganisms and active substances.

60. (New) The method of claim 59, wherein said at least one undesired reactant comprises a toxin present in said first reactant.

61. (New) The method of claim 46, wherein said first reactant is wine, and said one or more products include alcohol and carbon dioxide.

62. (New) The method of claim 46, wherein said one or more further reactants comprises at least one species of yeast used in alcohol fermentation.

63. (New) The method of claim 46, wherein said one or more further reactants comprises at least one species of lactic acid bacteria used in the biological acid breakdown process in wine treatment.

64. (New) The method of claim 46, wherein said one or more further reactants comprises one or more enzymes selected from the group consisting of pectinases, glucanases, β -glucosidases, proteases and glucose-fructose-isomerases.

65. (New) The method of claim 46, wherein said one or more further reactants comprises cells from at least one species of microorganism and at least one enzyme.

66. (New) The method of claim 46, wherein said one or more further reactants

comprises at least one species of yeast used in wine production as well as at least one of a yeast cell wall preparation and a glucose-fructose-isomerases.

67. (New) The method of claim 46, wherein said one or more further reactants comprises at least one substance known to increase activity of at least one of said one or more further reactants as regards the treatment of said first reactant with said at least one of said one or more further reactants.

68. (New) The method of claim 46, wherein at least one of the first primary component and the second primary component respectively of said first layer and said second layer is a polymer.

69. (New) The method of claim 68, wherein said polymer is a polyelectrolyte complex.

70. (New) The method of claim 69, wherein said polyelectrolyte complex comprises:

at least one polyanion selected from the group consisting of polyacrylic acid, polymethacrylic acid, polyvinylsulfonic acid, polyvinylphosphonic acid, alginate acid, cellulose derivatives including carboxymethyl cellulose and cellulose sulfuric acid ester, shellac and shellac components including aleuric acid and shellolic acid; and

at least one polycation selected from the group consisting of polyethylenimine, polydimethyl dialylammonium, chitosan and poly-L-lysine.

71. (New) The method of claim 70, wherein one of said polyanion and said polycation has a mean degree of polymerization in the range of 100 to 15,000 and the other of said polyanion and said polycation has a mean degree of polymerization more than 50,000.

72. (New) The method of claim 68, wherein said polymer is polystyrol, polymethyl methacrylate and/or natural rubber or a mixture thereof with one or more

polyelectrolyte complexes.

73. (New) The method of claim 46, wherein said one or more further reactants comprises at least one species of yeast used in beer production.

74. (New) The method of claim 46, wherein said microcapsule has a diameter of at least 0.5 millimeters.